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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,507	08/28/2006	Olivier Lavastre	31223.00114 (4-884)	3556
25264	7590	05/17/2007	EXAMINER	
FINA TECHNOLOGY INC			LU, C CAIXIA	
PO BOX 674412			ART UNIT	
HOUSTON, TX 77267-4412			PAPER NUMBER	
			1713	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/573,507

Applicant(s)

LAVASTRE ET AL.

Examiner

Caixia Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-37 is/are rejected.
- 7) ☒ Claim(s) 17-37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: throughout the disclosure, there are numerous typographic errors, e.g., page 1, lines 12, 17 and 29, extraneous spaces are found in words "final", "provide" and "use" respectively, and the list goes on. Applicants are urgent check through the specification thoroughly to identify and correct all of the similar typographic errors.

### ***Claim Objections***

2. Claims 17-37 are objected to because of the following informalities: typographic errors of "a" and ";;" in lines 5 and 7 of claim 17 should be corrected as "an" and ";;" respectively. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 25-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 25, line 4, the limitation of "the support comprises porous to functionalize beads of polystyrene" is confusing and furthermore the term of "beads of polystyrene" lacks antecedence. The examiner suggests replacing said limitation with --porous beads of polystyrene".

### ***Claim Rejections - 35 USC § 103***

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 17-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collina et al. (WO 96/11218) in view Chang (US 6,734,267), Smith et al. (US 4,587,227) and Lin et al. (New J. Chem. 2002, 26, 1485-1489).

Collina generally teach a multistage process for preparation of olefin polymers comprising (A) a first stage of polymerization to provide porous olefin polymer beads, (B) a treatment stage in which the catalyst used in the first stage of polymerization is deactivated and a second catalyst composition is impregnated to the porous polymer beads, and (C) a second stage of polymerization wherein one or more olefins are polymerized in the presence of the porous polymer beads impregnated with second catalyst.

It is noted that Collina does not expressly teach the impregnation of the catalyst to the porous polymer beads under vacuum and atmospheric pressure and the preparation of the porous ethylene polymer beads in the presence of a polystyrene supported ion based complex of formula (I) of claim 25. Impregnating the catalyst solution to a porous support under vacuum or pressure maximizes the impregnation of the catalyst composition to the porous of the support and thus minimizes fouling during polymerization and such is taught in Chang (col. 1, line 63 to col. 2, line 7). However, when the catalyst is only desired to be supported on the surface of the support to

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minimize the breakdown of the catalyst particles during polymerization, impregnating the catalyst solution to a porous support are generally conducted at atmospheric pressure, and such is demonstrated in Smith (col. 5, lines 22-35). Furthermore, Lin teaches the preparation of polyethylene hollow beads in the presence of a polystyrene supported ion based complex which provide improved morphology (page 1487, left col.).

The cited references are analogous because they all are from the same area of endeavor of olefin polymerizations.

Thus, it would have been obvious to a skilled artisan at the time the invention was made to employ Lin's polyethylene hollow beads as the support in Collin's supported catalyst composition preparation process and impregnating the support with a catalyst composition under vacuum, pressure or at atmospheric pressure in order to provide a support catalyst composition with improved morphology and desired impregnation since such is conventionally done in the art and in the absence of any showing of criticality and unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

Caixia Lu, Ph. D.  
Primary Examiner

